REMARKS

Claims 14, 15, 17-24, 34-38, 40-43, 49-51, 55-65, and 67-71 are pending. All of the pending claims are rejected for lack of written description and lack of enablement. Reconsideration of these rejections is requested.

35 U.S.C. § 112, first paragraph - written description

Claims 14, 15, 17-24, 34-38, 40-43, 49-51, 55-65, and 67-69 remain rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

To satisfy the written description requirement, an Applicant must convey with reasonable clarity to those skilled in the art as of the filing date that he or she was in possession of the invention as claimed, *i.e.*, that the disclosure must reasonably convey to the artisan that the inventor has possession of the invention as claimed (MPEP at 2163.02). The Examiner is reminded that there is a strong presumption that an adequate written description of the claimed invention is present when the application is filed.

Independent claim 14 is drawn to a method for inhibiting a yeast or fungal infection by topically administering *B.coagulans* ATCC 31284 to the skin or mucous membrane, and independent claim 34 is drawn to a method of applying the same bacteria to a solid surface and then contacting skin or a mucous membrane to inhibit growth of a yeast or fungus on the adjacent skin. In other words, claim 14 involves direct application, while claim 34 employs the use of a vehicle, e.g., a flexible article such as a diaper, pad, patch, etc. to put the bacteria in contact with skin or a mucous membrane. Thus, the step(s) of the invention is simple - contacting a skin or mucous membrane surface with a bacteria. The claims are limited to contacting 2 species of tissue - skin or mucous membrane, not any tissue in general. Application is topical, i.e., the *B. coagulans ATCC 31284* is applied to the surface of the required tissues. Moreover, the claims have been limited to administration of a single species, *B.coagulans* ATCC 31284, rather than an entire class or genus of bacteria.

In the paragraph spanning pages 8-9 of the Office Action, the Examiner states:

> applicants do not point out where in the specification they sufficiently described the claimed invention in such full, clear, concise, and exact terms that a skilled artisan would recognize that applicants were in possession of the claimed invention as drawn to in vivo treatment of fungal infections by applying strain ATCC31284. (emphasis added)

A lack of written description may arise if the knowledge and level of skill in the art would not permit one of skill in the art to envisage the invention. The Examiner seems to rely on the phrase "*in vivo*" as being key to the skilled artisan in determining whether or not the inventors had possession of the invention. First, "*in vivo*" is not a claim term - and the method does not involve general administration *in vivo*. The operative claim term here is "topically" - i.e., to a surface tissue, specifically to the surface of skin or mucous membrane. Thus, most of not all of the issues related to general *in vivo* administration (e.g., oral, i.v., i.p., i.m.) are inapplicable, because the claims require simple contact, i.e., topical application, of a specific bacterium to 2 specific tissue types.

Given the simplicity of the active step of the invention and the fact that the active step requires certain recited species rather than generic terms, Applicants submit that the Examiner has not adequately explained why the written description requirement has not been met. Withdrawal of this ground of rejection is respectfully requested.

35 U.S.C. § 112, first paragraph - enablement

Claims 14-24, 34-43, and 49-69 remain rejected for lack of enablement.

The Examiner has noted that the Declaration of Sean Farmer, which was submitted on 10/31/07, was unsigned. Applicants submit herewith a signed copy of the Declaration.

At the heart of the Examiner's rationale for rejecting the claims appears to be that the data provided in the as-filed specification and the data described in Mr. Farmer's Declaration "are not persuasive because the results are based on in vitro agar plate assays that do no (sic) involve any animal cells and/or infected tissue" (page 11, lines 2-3, of the Office Action).

On page 9, of the Office Action, the Examiner states:

> the instant claims are directed to *in vivo* application of the strain ATCC 31284 but the written disclosure describes only ***in vitro*** assays of antimicrobial activity of *Bacillus coagulans* ATCC 31284 (page 12, line 7 and pages 24-26) towards infections belonging to *Trichophyton* species and *Candida* species. The protocol of the *in vitro* assays is based on measuring inhibition zones on agar plates. First, the inhibition zones on agar plates demonstrate antimicrobial activity through diffusion of antimicrobial agents through agar. No animal cells including skin or mucous membrane cells are involved in the *in vitro* assays as disclosed.

And on page 10 of the Office Action, the Examiner responds to Applicants' previously presented arguments:

> applicants argue that rigorous or exact correlation between in vitro and in vivo systems are not required and that if the art is such that a model is recognized as correlating to a specific condition, then the model should be accepted as a correlation unless the Examiner has evidence that the model does not correlate. First, it is uncertain as argued whether in vitro antimicrobial activity of Bacillus coagulans on agar plates would correlate with competitive exclusion of pathogens by Bacillus coagulans grown on infected animal epithelial cells

If the art is such that a model is recognized as correlating to a specific condition, then the model should be accepted as a correlation unless the Examiner has evidence that the model does not correlate. (*See* MPEP § 2164.02.) Rigorous or exact correlation is not required. Merely a reasonable correlation based on the evidence as a whole is sufficient. (*See e.g.*, *In re Brana*, 34 USPQ2d 1436 (1995)). In this case, there is reasonable correlation based on the evidence, because the *in vitro* assay measures inhibition of yeast or fungal growth on a surface (*Trichophyton* or *Candida* growth on agar) by directly contacting the surface with *B. coagulans*, and the claimed method required inhibition of yeast or fungal growth on a surface (skin or mucous membrane) by direct contact (topical administration) with *B. coagulans*.

The standard zone of inhibition assay (described in Example 1 of the specification and in the Declaration of Sean Farmer) involves growth of confluent bed of a microbes (in this case, eight different strains of *Trichophyton* (specification) or three different strains of *Candida* (Declaration of Sean Farmer)). A drop of the test substance (in this case, *B. coagulans*) is placed in contact with the confluent bed of fungus, and the presence of absence of a zone of inhibition of fungal growth was ascertained.

The Examiner has not articulated why a skilled artisan would have any reason to question the applicability of a standard zone of inhibition assay to growth of a yeast or fungus on a skin or mucous membrane tissue surface. Applicants submit that one of skill in the art would deem the model system used not only suitable but a close approximation of the actual clinical scenario (growth of yeast or fungus on a skin or mucous membrane surface). The data in the originally-filed specification and in the Declaration filed herewith establish that undue experimentation would not be required to practice the claimed invention. Therefore, this rejection should be withdrawn.

CONCLUSION

On the basis of the foregoing amendments and remarks, Applicants respectfully submit that this paper is fully responsive and that the pending claims are in condition for allowance. Such action is respectfully requested. If there are any questions regarding these amendments and remarks, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

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